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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Wenmin Qu et al.

Serial No.: 10/533,119

Filed: April 29, 2005

For: DEVICE AND METHOD FOR
MEASURING CAPACITANCE AND
DEVICE FOR DETERMINING THE
LEVEL OF A LIQUID USING ONE
SUCH DEVICE

PATENT

Art Unit:

Examiner:


**SUBMISSION OF ENGLISH LANGUAGE
PRELIMINARY EXAMINATION REPORT**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith is an English language Preliminary Examination Report for the
above-identified application.

Respectfully submitted,


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Dated: Aug. 24, 2005

PATENT COOPERATION TREATY

PCT/EP2003/01144

From the INTERNATIONAL BUREAU

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NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rule 72.2)

To:

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Eingegangen: 10. AUG. 2005
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04 August 2005 (04.08.2005)

Applicant's or agent's file reference

10cdh/229111

IMPORTANT NOTIFICATION

International application No.

PCT/EP2003/011449

International filing date (day/month/year)

16 October 2003 (16.10.2003)

Applicant

HYDAC ELECTRONIC GMBH et al

1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

2. Transmittal of the copy of the translation to the elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

None

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

EP, US

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO
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Translation

PATENT COOPERATION TREATY

PCT/EP2003/011449



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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 10cdh/229111	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/EP2003/011449	International filing date (day/month/year) 16 October 2003 (16.10.2003)	Priority date (day/month/year) 19 December 2002 (19.12.2002)
International Patent Classification (IPC) or national classification and IPC G01F 23/26		
Applicant HYDAC ELECTRONIC GMBH		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 5 sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

- This report contains indications relating to the following items:
 - ☒ Box No. I Basis of the report
 - ☐ Box No. II Priority
 - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Box No. IV Lack of unity of invention
 - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Box No. VI Certain documents cited
 - ☐ Box No. VII Certain defects in the international application
 - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 25 May 2004 (25.05.2004)	Date of completion of this report 24 January 2005 (24.01.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2003/011449

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages _____ 1-14 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____, as originally filed/furnished
- pages* _____, as amended (together with any statement) under Article 19
- pages* _____ 1-16 received by this Authority on 25 May 2004 (25.05.2004)
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages _____ 1/3-3/3 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 03/11449

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-16	YES
	Claims		NO
Inventive step (IS)	Claims	1-16	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

2. Citations and explanations

1. Reference is made to the following documents:

D1: US-A-6 101 873

D2: US-A-4 003 259

2. Claim 1

Document D1 discloses the features of the preamble of the present claim 1. See, for example, the device (100; figure 3, D1) with the electrode array (TE1, TE2, ... TEn; figure 3, D1) on the support (10; figure 3, D1), and with a measuring device (35, figure 3, D1) and a controllable switching device (SW20; figure 6, D1), every electrode (TE1, TE2, TE3, TE4; figure 6, D1) of the electrode array being switchable alternately as a measuring electrode (TE2, figure 7, D1) by said switching device (SW20; figure 6, D1) and at least one further electrode (TE1; figure 7, D1) being switchable to a prescribed reference potential as a counter-electrode.

The subject matter of claim 1 thus differs from the device known from D1 in that, with the exception of the measuring electrode, all of the other electrodes "are switched to the reference potential as counter-electrodes". According to document D1 (see figure 7),

by contrast, only one single electrode besides the measuring electrode is switched as a counter-electrode, and the rest of the electrodes are switched to ground.

The problem to be solved by the present invention can thus be seen as that of proposing an alternative switching pattern.

Since none of the other search report citations describes a switch in which one of the electrodes serves as a measuring electrode while "all [other] electrodes are switched, as counter-electrodes, to a reference potential", the subject matter of claim 1 involves an inventive step (PCT Article 33(3)).

In particular, document DE-A-100 15 306 does not describe a controllable switch. Document D2 describes an arrangement in which half of the electrodes, without a switch, are linked to a conductor (11; figure 1, D2). The switches (S1, ..., S5; figure 1, D2) serve only to switch each respective measuring electrode and not to activate counter-electrodes.

3. Method claim 9 defines method steps that are equivalent to the device features according to claim 1. Therefore, the subject matter of claim 9 is inventive for reasons analogous to those mentioned under point 2 (PCT Article 33).
4. Device claim 11 contains all of the device features of claim 1. Therefore, the subject matter of claim 11 is inventive for reasons analogous to those mentioned under point 2 (PCT Article 33).

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/11449

5. Claims 2-8, 10 and 12-16 are dependent upon claims 1 and 9 or 11, respectively, and thus likewise satisfy the PCT requirements with respect to novelty and inventive step.